

What is claimed is:

1. A fuel cell pack including a plurality of cells each having a membrane in its middle and a cathode and an anode at both sides of the membrane, collector plates contacting the cathode and the anode, respectively, in each cell, and an electrical connection member for electrically connecting adjacent cells, at least two cells being provided, the cells being evenly disposed on an arbitrary plane with a hollow interposed between two adjacent cells, the electrical connection member being positioned in the hollow, the fuel cell pack comprising:

a porous fuel diffusion member contacting the anode of each cell;

a porous air contact member contacting the cathode of each cell;

an anode end plate and a cathode end plate disposed at the side of the anodes of the cells and at the side of the cathodes of the cells, respectively, for protecting the cells;

fuel supply and discharge means for supplying fuel toward the anodes in the hollow and discharging the fuel;

a fuel flow stopper disposed at a portion at the part of the cathodes in the hollow, the fuel flow stopper preventing fuel flowing at a portion at the part of the anodes in the hollow from flowing toward the portion at the part of the cathodes in the hollow; and

a sealing member for sealing the anodes of the cells and the portion of the hollow corresponding to the anodes.

2. The fuel cell pack of claim 1, wherein a fuel inlet and a fuel outlet corresponding to the hollow are disposed on the anode end plate with a predetermined interval.

3. The fuel cell pack of claim 1, wherein the porous fuel diffusion member is formed of a carbon-plastic composite.

4. The fuel cell pack of claim 3, wherein the porous fuel diffusion member comprises carbon or graphite impregnated therein.

1           5.     The fuel cell pack of claim 1, wherein the porous air contact member is  
2     formed of a carbon-plastic composite.

1           6.     The fuel cell pack of claim 1, wherein the porous air contact member  
2     has a plurality of channels for the flow of air on its bottom.

1           7.     The fuel cell pack of claim 1, wherein the electrical connection member  
2     has a shape of a mesh.

1           8.     The fuel cell pack of claim 1, wherein through holes are formed in the  
2     collector plates contacting the cathodes and the cathode end plate such that the  
3     through holes in the collector plates correspond to those in the cathode end plate  
4     one to one.

1           9.     A fuel cell pack including a plurality of cells each having a membrane  
2     in its middle and a cathode and an anode at both sides of the membrane, collector  
3     plates contacting the cathode and the anode, respectively, in each cell, and an  
4     electrical connection member for electrically connecting adjacent cells, at least two  
5     cells being provided, the cells being disposed on both sides of an intermediate layer,  
6     which is provided with fuel supply and discharge means, with a hollow of  
7     predetermined volume interposed between two adjacent cells in the level direction of  
8     the intermediate layer, the electrical connection member being disposed in the  
9     hollow, the anodes of the cells disposed on both sides of the intermediate layer  
10    contacting the intermediate layer, the fuel cell pack comprising:

11           a porous fuel diffusion member contacting the anode of each cell;

12           a porous air contact member contacting the cathode of each cell;

13           first and second end plates disposed at the respective sides of the cathodes  
14    of the cells, for protecting the cells;

15           a fuel flow stopper disposed at a portion corresponding to the cathodes of  
16    adjacent cells in a hollow, the fuel flow stopper preventing fuel flowing at a portion at  
17    the part of the anodes in the hollow from flowing toward the portion at the part of the  
18    cathodes in the hollow; and

b2  
B3  
19 a sealing member for sealing the anodes of the cells and the portion of a  
20 hollow corresponding to the anodes.

1 10. The fuel cell pack of claim 9, wherein fuel is supplied to the anodes  
2 starting from anodes at the center of the fuel cell pack.

b2  
B3  
1 11. The fuel cell pack of claim 9, wherein at least two cells are disposed on  
2 each of both sides of the intermediate layer, and a fuel inlet and a fuel outlet which  
3 correspond to hollows, respectively, between the cells are disposed in the  
4 intermediate layer at a predetermined interval.

12. The fuel cell pack of claim 9, wherein the porous fuel diffusion member  
is formed of a carbon-plastic composite.

13. The fuel cell pack of claim 9, wherein the porous fuel diffusion member  
comprises carbon or graphite impregnated therein.

b2  
B3  
14. The fuel cell pack of claim 9, wherein the porous air contact member is  
formed of a carbon-plastic composite.

1 15. The fuel cell pack of claim 9, wherein the air contact member has a  
2 plurality of channels for the flow of air on its bottom.

1 16. The fuel cell pack of claim 9, wherein the electrical connection member  
2 has a shape of a mesh.